

Permit Fact Sheet

General Information

Permit Number:	WI-0069965-08-0
Permittee Name:	MSI Express Inc
Address:	5900 Carlson Avenue
City/State/Zip:	Portage IN 46368
Discharge Location:	A channel depression leading to an unnamed tributary to the West Branch of the Fond du Lac River, in the Fond du Lac River Watershed (UF03), Upper Fox River Basin, in Fond du Lac County
Receiving Water:	Unnamed tributary to the West Branch of the Fond du Lac River
Stream Flow (Q _{7,10}):	0 cfs
Stream Classification:	Warm Water Sport Fish (WWSF) community, non-public water supply at the unnamed tributary

Facility Description

This facility packages aseptic fruit juices. High strength wastewater is captured in a 13,000-gallon tank and is hauled to a wastewater treatment facility/anaerobic digester for final disposal. Noncontact cooling water and boiler water softener backwash is discharged to surface water.

Substantial Compliance Determination

Enforcement During Last Permit: There were no formal enforcement actions taken during the previous permit term.

After a desk top review of all discharge monitoring reports, land application reports, and a site visit on 1/24/22, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	0.092 MGD (Average for Jan-Dec 2021)	Representative samples of noncontact cooling water blended on a proportional basis with boiler water softener backwash water shall be sampled within the building, prior to any stormwater contribution and prior to discharge to the tributary. Temperature shall be monitored in the storm sewer ditch at a location near Rose-Eld Road and may also be monitored at the outlet of the drain tile just prior to discharge to the tributary.

Sample Point 005 (Land Application) has been discontinued in the purposed permit as the facility no longer land applies.

1 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- NCCW-BOILER SOFTENER BACKWASH

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Weekly	Estimated	
BOD5, Total		mg/L	Monthly	Grab	Monitoring only January - December, 2025.
Dissolved Oxygen		mg/L	Monthly	Grab	Monitoring only January - December, 2025.
pH Field	Daily Max	9.0 su	Quarterly	Grab	
pH Field	Daily Min	6.0 su	Quarterly	Grab	
Suspended Solids, Total		mg/L	Weekly	Grab	
Suspended Solids, Total	Daily Max	24.9 lbs/day	Weekly	Calculated	See TSS TMDL section in the permit.
Suspended Solids, Total	Monthly Avg	15.2 lbs/day	Weekly	Calculated	See TSS TMDL section in the permit.
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of TSS and report on the last day of the month on the DMR. See TMDL Calculations section in the permit.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of TSS discharged and report on the last day of the month on the DMR. See TMDL Calculations section in the permit.
Phosphorus, Total		mg/L	Weekly	Grab	
Phosphorus, Total	Monthly Avg	0.2 lbs/day	Weekly	Calculated	See Phosphorus TMDL section in the permit.
Phosphorus, Total	6-Month Avg	0.068 lbs/day	Weekly	Calculated	See Phosphorus TMDL section in the permit.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					the DMR. See TMDL Calculations section in the permit.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL Calculations section in the permit.
Temperature	Daily Max	81 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in March & November each year.
Temperature	Daily Max	86 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in May & September each year.
Temperature	Daily Max	88 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in June & August each year.
Temperature	Daily Max	89 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in July each year.
Temperature	Daily Max	84 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in October each year.
Temperature	Weekly Avg	53 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in January, November & December each year.
Temperature	Weekly Avg	54 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in February each year.
Temperature	Weekly Avg	56 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in March each year.
Temperature	Weekly Avg	59 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					in April each year.
Temperature	Weekly Avg	69 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in May each year.
Temperature	Weekly Avg	80 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in June each year.
Temperature	Weekly Avg	85 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in July & August each year.
Temperature	Weekly Avg	77 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in September each year.
Temperature	Weekly Avg	65 deg F	Weekly	Grab	Limit effective beginning April 1, 2025. Limit applies in October each year.

Changes from Previous Permit

- Addition of 1 year of monitoring for total BOD₅ and dissolved oxygen.
- Increased phosphorus monitoring and addition of monthly average and 6-month average limits due to the UFW (Upper Fox Wolf River Basin) TMDL.
- Addition of total suspended solids monitoring and daily maximum and monthly average limits due to the UFW TMDL.
- Addition of pH monitoring and daily maximum and daily minimum limits.
- Addition of temperature daily maximum and weekly average limits, to become effective beginning April 1, 2025, per the Temperature Limits Compliance schedule. Limits apply to the months following the effective date.

Explanation of Limits and Monitoring Requirements

Water Quality Based Limits

Refer to the WQBEL memo for the detailed calculations, prepared by the Water Quality Bureau dated December 16, 2021 (updated January 28, 2022) used for this reissuance.

Phosphorus TMDL Limits – Mass based phosphorus limits of 0.068 lbs/day as a 6-month average and 0.20 lbs/day as a monthly average have been added to the permit to comply with the requirements of the Upper Fox Wolf River TMDL. Effluent concentration (mg/L) shall be monitored and reported weekly upon permit reissuance and will be used to calculate amounts reported for mass-based limits. An additional reporting requirement for lbs/month will be used to calculate the facility's 12-month rolling sum of total monthly discharge, which can be compared directly to the facility's designated WLA.

Total Suspended Solids TMDL Limits – Mass based TSS limits of 24.6 lbs/day as a daily maximum and 15.2 lbs/day as a monthly average have been added to the permit to comply with the requirements of the Upper Fox Wolf River TMDL. Effluent concentration (mg/L) shall be monitored and reported weekly upon permit reissuance and will be used to

calculate amounts reported for mass-based limits. An additional reporting requirement for lbs/month will be used to calculate the facility's 12-month rolling sum of total monthly discharge, which can be compared directly to the facility's designated WLA.

Upper Fox Wolf River Total Maximum Daily Load (TMDL) – The permitted facility is located within the Upper Fox Wolf River Basin (UFW) Total Maximum Daily Load (TMDL), which was approved by EPA February 27, 2020. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus and total suspended solids that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from and comply with the applicable water quality criterion and are consistent with the assumptions and requirements of the EPA-approved WLAs in the TMDL, which are 13 lbs/yr for phosphorus and 2,803 lbs/yr for TSS for the permitted facility.

The approved TMDL expresses WLAs as lbs/year and lbs/day (maximum annual load divided by 365 days). As outlined in Section 4.6 of the Department's 2020 *TMDL Implementation Guidance for Wastewater Permits*, TMDL limits must be given in the permit that are consistent with the TMDL WLA permit limits derived from TMDL and need to be expressed as specified by 40 CFR 122.45 (d), s. NR 212.76 (4), and s. NR 205.065 (7), Wis. Adm. Code, unless determined to be impracticable. Impracticability has already been determined for phosphorus limits as laid out in the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at <https://prodoasint.dnr.wi.gov/swims/downloadDocument.do?id=167886175>).

For phosphorus, continuously discharging facilities covered by the UFW TMDL are given monthly average mass limits. If the equivalent effluent concentration is less than or equal to 0.3 mg/L, 6-month average mass limits (averaging period of May through October and November through April) are also included. The equivalent effluent concentration of 0.043 mg/L was calculated for the facility, thus, TMDL based mass limits are expressed as a 6-month average and a monthly average equal to three times the 6-month average limit.

For TSS, continuously discharging industrial facilities covered by the UFW TMDL are given monthly average and daily maximum mass limits.

Facilities with UFW TMDL based effluent limits for phosphorus and TSS must report the 12-month rolling sum of total monthly discharge (lbs/yr). If reported 12-month rolling sums exceed the facility's maximum annual WLA, the facility's mass limits (monthly average and 6-month average) may be recalculated using more appropriate CVs or monitoring frequencies when the permit is reissued to bring discharge levels into compliance with the facility's given WLA.

Thermal – Temperature requirements are based on the Thermal Rules which became effective 10/1/2010 and are detailed in NR 102, Water Quality Standards for Temperature and NR 106, Effluent Limits for Temperature, Wis. Adm. Code. Limits for temperature, and a schedule to come into compliance, are included based on the procedures in s. NR 106.56, Wis. Adm. Code.

Categorical Limits

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102, Water Quality Standards and NR 217, Effluent Standards and Limitations for Phosphorus, Wis. Adm. Code. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. The code categorically limits industrial dischargers of more than 60 pounds of phosphorus per month to 1.0 mg/L unless an alternative limit is approved. NR 217 also specifies WQBELs (water quality based effluent limits) for discharges of phosphorus to surface waters of the state from publicly and privately owned wastewater facilities, noncontact cooling water discharges which contain phosphorus, concentrated animal feeding operations that discharge through alternative treatment facilities and a facility/site that is regulated under NR 216 where the standards in NR151 and 216 are not sufficient to meet phosphorus criteria. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards.

Because MSI Express does not currently have an existing technology-based limit, the need for this limit in the reissued permit was evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 60

lbs/month, which is the threshold for industrial facilities in accordance with s. NR 217.04(1)(a)2, Wis. Adm. Code, and therefore no technology-based limit is required.

Thermal – Requirements for Temperature are included in NR 102, Subchapter II, Water Quality Standards for Temperature and NR 106, Subchapter V, Effluent Limitations for Temperature, Wis. Adm. Code. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. The more stringent thermal limits are included.

2 Compliance Schedules

2.1 Temperature Limits Compliance

This compliance schedule requires the permittee to achieve compliance by the specified date.

Required Action	Due Date
Preliminary Compliance Report: Submit a preliminary compliance report indicating alternatives to achieve the final temperature limits. Informational Note: Refer to NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code, for information regarding the re-evaluation of limits.	03/31/2023
Action Plan: Submit an action plan for complying with all applicable effluent temperature limits.	09/30/2023
Initiate Actions: Initiate actions identified in the plan.	03/31/2024
Complete Actions: Complete actions necessary to achieve compliance with effluent temperature limits.	03/31/2025

Explanation of Compliance Schedules

Temperature Limits Compliance – This is a standard schedule included to allow an industrial facility time to investigate and come into compliance with the applicable effluent limitations.

Attachments:

Water Quality Based Effluent Limits (WQBEL) memo, by Nicole Krueger, Water Resources Engineer, dated 12/16/21 (updated 2/8/22)

Proposed Expiration Date:

March 31, 2027

Justification of Any Waivers from Permit Application Requirements:

No waivers were granted from permit application requirements.

Prepared By: Sarah Donoughe, Wastewater Specialist

Date: January 31, 2022